at least one light source;

a plurality of fiber optic conductors permanently formed within and non-affixed on the shell, the fiber optic conductors each having a first end optically coupled to the light source and having a second end for emitting light;

a power source; and

logic circuitry coupled to the light source and the power source for controlling operation of the light source, wherein the light source, the power source, and the logic are located on the shell.

REMARKS

Claims 1-30 are pending. Claims 1-30 were rejected in an Office Action dated August 1, 2002 in the parent case. Applicant respectfully requests consideration and allowance of all pending claims.

Claims 1-4, 7, 15-18, and 21 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,931,559 (Pfaeffle patent). Claims 1-7, 14-21, and 28 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,007,213 (Baumgartner patent). Claims 1-7, 14-21, and 28 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,588,736 (Shea patent).

Independent claims 1 and 15 have been amended to recite that the light conductive paths are "permanently formed within and non-affixed on" the surface or helmet. In the present invention the light conductive paths are permanently formed within the surface and, in effect, form a contiguous element with the material of the surface after being formed within it. In order words, the light conductive paths are not, for example, glued on the surface of the material. Rather, they are formed contiguous with the surface.

Applicant respectfully submits that the Pfaeffle, Baumgartner, and Shea patents do not disclose or suggest this feature. The Pfaeffle patent shows fiber optics, in grooves on a helmet, secured with adhesive tape. The fiber optics are thus not necessarily permanently attached to the helmet. Even if they were considered permanent, they are not non-affixed on the helmet; rather, they are affixed directly in the grooves.

The Baumgartner patent shows fiber optic cables clamped between shells of a helmet. The fiber optic cable is held in place by the two shells, which mate together. The

fiber optic cable is not permanent in the sense that, if the shells are separated, the fiber optic cable can be removed. Even if the shells were permanently joined together, the fiber optic cable is not non-affixed. The cable is affixed within a channel between the shells.

The Shea patent shows a phosphorescent shell for a helmet. The shell includes fiber optics to make it glow, and the fiber optics are affixed on the inside of the helmet. Therefore, the fiber optics are not non-affixed, as required by Applicant's claims.

Accordingly, Applicant respectfully submits that independent claims 1 and 15 are patentably distinguishable over the Pfaeffle, Baumgartner, and Shea patents.

Claims 8-13, 22-27, and 29-30 were rejected under 35 U.S.C. § 103 as having been obvious over the Glatt '947 or '409 patents, in combination with the Pfaeffle, Baumgartner, or Shea patents. With respect to independent claim 29, the Pfaeffle, Baumgartner, and Shea patents do not disclose or suggest, for the reasons provided above, the feature of "fiber optic conductors permanently formed within and non-affixed on the shell," as appears in the amended claim.

The Glatt patents likewise do not disclose or suggest this feature. In particular, the wires in the Glatt patents reside loosely in a channel and hence are not permanently formed within the material of the helmet. If the wires were permanently attached to the surface, such as through use of an adhesive, it would then be fixed upon the surface and still not disclose or suggest all elements of claim 29. It requires the light conductive paths or fiber optic conductors be formed within and non-affixed on the surface.

Applicant respectfully submits that dependent claims 8-13, 22-27, and 30 are patentable for at least the same reasons provided for their respective base claims.

Finally, the type of conductive paths now defined in the independent claims 1, 15, and 29 can provide, for example, the following advantages when compared with prior art arrangements. By being permanently formed within and non-affixed on the surface, the light conductive paths or fiber optic conductors have greater durability and are less likely to break apart. The contiguous construction of the light conductive paths or fiber optic conductors with the surface results in fewer components, providing greater safety for the wearer. In comparison, the prior art typically shows small components that could potentially break apart from the helmet and injure the wearer during an accident.

In view of the above amendments and remarks, Applicant respectfully requests consideration and allowance of all pending claims.

Respectfully submitted,

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Version with Markings to Show Changes Made

Claims 1, 15, and 29 are amended as follows.

1. (Amended) A light system on a helmet having an exterior surface, the light system comprising:

at least one light source; and

at least one light conductive path [attached to] permanently formed within and non-affixed on the exterior surface of the helmet, the path having a first end optically coupled to the light source and a second end for emitting light.

15. (Amended) A circuit on a curved surface, the circuit comprising:

at least one light source; and

at least one light conductive path [attached to] permanently formed within and non-affixed on the curved surface, the conductive path having a first end optically coupled to the light source and a second end for emitting light.

29. (Amended) A light system on a helmet, comprising:

a shell;

at least one light source;

a plurality of fiber optic conductors [attached to] permanently formed within and non-affixed on the shell, the fiber optic conductors each having a first end optically coupled to the light source and having a second end for emitting light;

a power source; and

logic circuitry coupled to the light source and the power source for controlling operation of the light source, wherein the light source, the power source, and the logic are located on the shell.